ADDITIONAL

Service Manual

PIONEER

ORDER NO.
ARP-052-0

NON SWITCHING AMP
STEREO AMPLIFIER

A-8

- **In the Model A-8 with the following serial numbers, the power amplifier and power transformer shall be changed as shown in the table below.**

Type	Serial No.	Power amp. ass'y	Power transformer
KU	3600101 and thereafter	AWH-108	ATT-763-A
KC	3400801 and thereafter	AWH-110	ATT-764-A
HE	9404701 and thereafter	AWH-112	ATT-766-A
HB	9500901 and thereafter	AWH-112	ATT-766-A
S	2603301 and thereafter	AWH-108	ATT-765-A
S/G	2900301 and thereafter	AWH-108	ATT-765-A

- **When servicing the model A-8, please refer to the serial number on the rear panel.**
- **This power amplifier employs Nested Feedback Loops (NFL). For the description of NFL, please refer to the circuit description (ART-762) of Model A-6 and A-5.**

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
U.S. PIONEER ELECTRONICS CORPORATION 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Luithagen-Haven 9, 2030 Antwerp, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

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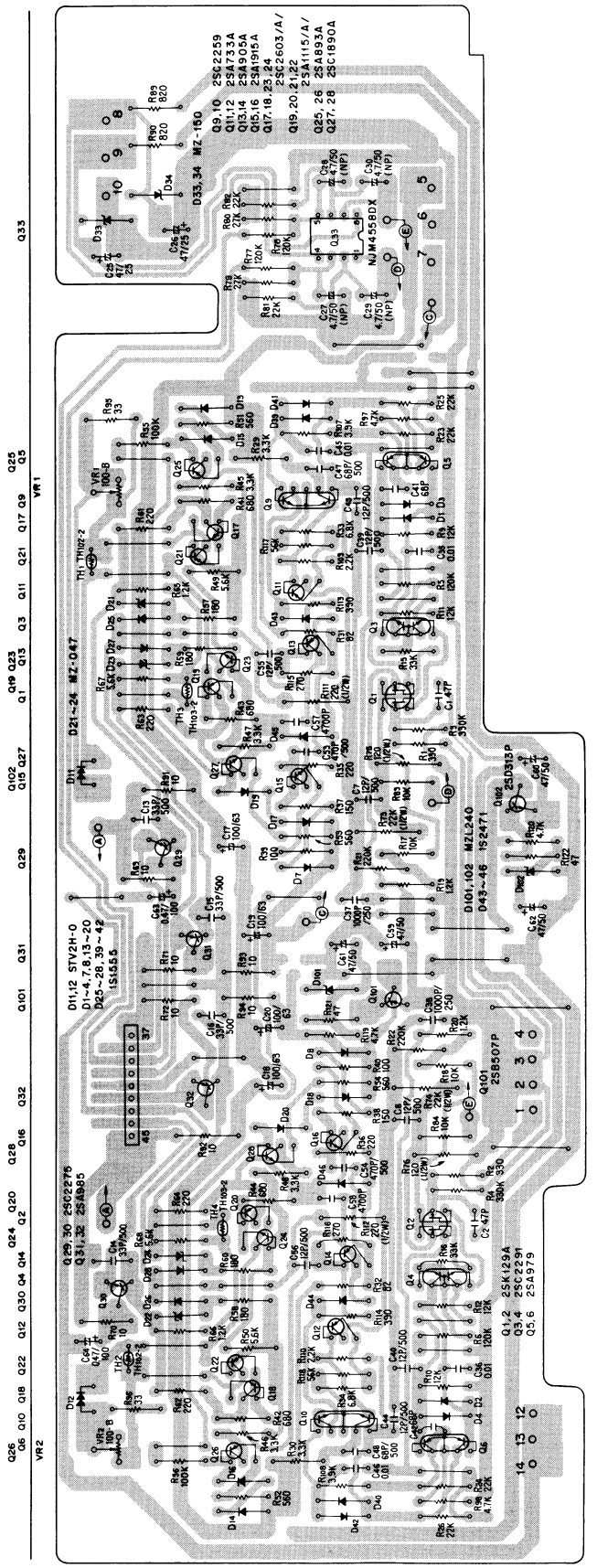
P.C. BOARD ASSEMBLIES

POWER AMPLIFIER ASSEMBLY (AWH-108, AWH-110)



Parts List of AWH-108 (for KU, S and S/G types)

CAPACITORS

Mark	Part No.	Symbol & Description
	ACH-359 (CEXANP 4R7M 50)	C27–C30 Electrolytic (4,7/50V NP)
	CEA R47M 100L	C63, C64
	CEA 470M 25L	C25, C26
	CEA 470M 50L	C59–C62
	CEA 101M 63L	C17–C20
	CCDSL 120K 500	C7, C8, C39, C40, C43
	CCDSL 120K 500	C44, C55, C56
	CCDSL 330K 500	C13–C16
	CCDSL 680K 500	C47, C48
	CCDSL 470J 50	C1, C2
	CCDSL 680J 50	C41, C42
	CKDYB 472K 50	C57, C58
	CKDYB 471K 500	C53, C54
	CKDYF 103Z 50	C35, C36, C45, C46
	CQMA 102K 250	C37, C38

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	ACP-019	VR1, VR2 Semifixed (100Ω)
	PD¼PM □□□ J	R1, R2, R5, R6, R15–R26, R29, R30 R33, R34, R45–R60, R65–R68, R77–R84, R89, R90, R95–R98, R107–R110, R115–R120, R121, R122
	RD¼PM □□□ JNL	R3, R4, R9–R12
⚠	RD¼ PMF □□□ J	R31, R32, R35–R44, R61–R64, R69–R72, R91–R94, R113, R114
	RD¼ PS □□□ J	R73–R76, R111, R112
★	TH102–2	TH1, TH2
★	TH103–2	TH3, TH4

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	2SK129A	Q1, Q2
★★	2SC2291	Q3, Q4
★★	2SA979	Q5, Q6
★★	2SC2259	Q9, Q10
★★	2SA733A (2SA1115/A/) (2SA992)	Q11, Q12
★★	2SA905A	Q13, Q14
★★	2SC1915A (2SC1915)	Q15, Q16
★★	2SC2603/A/ (2SC1400)	Q17, Q18, Q23, Q24
★★	2SA1115/A/ (2SA750)	Q19–Q22
★★	2SA893A	Q25, Q26
★★	2SC1890A	Q27, Q28
★★	2SC2275	Q29, Q30
★★	2SA985	Q31, Q32
★★	2SB507P (2SB834) (2SB682)	Q101
★★	2SD313P (2SD880) (2SD712)	Q102
★★	NJM4558DX (μPC4558C-P)	Q33
★	MZ-047	D21–D24
★	MZ-150 (WZ-150)	D33
★	MZL240	D101, D102
★	1S2471	D43–D46
★	1S1555 (1S2473) (1S2076) (US1035)	D1–D4, D7, D8, D13–D20, D25–D28, D39–D42
★	STV2H-0	D11, D12

Parts List of AWH-110 (for KC type)

CAPACITORS

Mark	Part No.	Symbol & Description
	ACH-359 (CEXANP 4R7M 50)	C27–C30 Electrolytic (4,7/50V NP)
	CEA R47M 100L	C63, C64
	CEA 470M 25L	C25, C26
	CEA 470M 50L	C59–C62
	CEA 101M 63L	C17–C20
	CCDSL 120K 500	C7, C8, C39, C40, C43
	CCDSL 120K 500	C44, C55, C56
	CCDSL 330K 500	C13–C16
	CCDSL 680K 500	C47, C48
	CCDSL 470J 50	C1, C2
	CCDSL 680J 50	C41, C42
	CKDYB 472K 50	C57, C58
	CKDYB 471K 500	C53, C54
	CKDYF 103Z 50	C35, C36, C45, C46
	CQMA 102K 250	C37, C38

RESISTORS

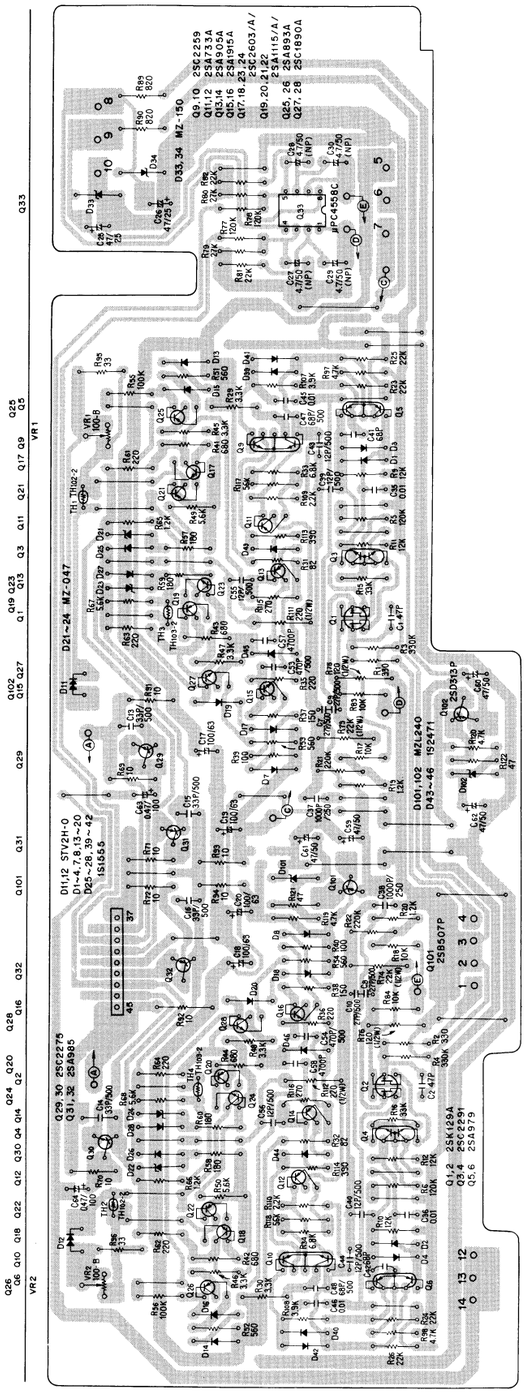
Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	ACP-019	VR1, VR2 Semifixed (100Ω)
	RD¼PM □□□ J	R1, R2, R5, R6, R15–R26, R29, R30, R33, R34, R45–R60, R65–R68 R77–R84, R89, R90, R95–R98, R107–R110, R115–R120
	RD¼PM □□□ JNL	R3, R4, R9–R12
⚠	RD¼PMF □□□ J	R35–R38, R63, R64, R69–R72, R93, R94, R113, R114
⚠	RD¼PMFL □□□ J	R31, R32, R39–R44, R61, R62, R91, R92, R121, R122
	RD½PS □□□ J	R73–R76
⚠	RD½PSF □□□ J	R111, R112
★	TH102–2	TH1, TH2
★	TH103–2	TH3, TH4

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	2SK129A	Q1, Q2
★★	2SC2291	Q3, Q4
★★	2SA979	Q5, Q6
★★	2SC2259	Q9, Q10
★★	2SA733A (2SA1115/A/) (2SA992)	Q11, Q12
★★	2SA905A	Q13, Q14
★★	2SC1915A (2SC1915)	Q15, Q16
★★	2SC2603/A/ (2SC1400)	Q17, Q18, Q23, Q24
★★	2SA1115/A/ (2SA750)	Q19–Q22
★★	2SA893A	Q25, Q26
★★	2SC1890A	Q27, Q28
★★	2SC2275	Q29, Q30
★★	2SA985	Q31, Q32
★★	2SB507P (2SB834) (2SB682)	Q101
★★	2SD313P (2SD880) (2SD712)	Q102
★★	NJM4558DX (μPC4558C-P)	Q33
★	MZ-047	D21–D24
★	MZ-150 (WZ-150)	D33
★	MZL240	D101, D102
★	1S2471	D43–D46
★	1S1555 (1S2473) (1S2076) (US1035)	D1–D4, D7, D8, D13–D20, D25–D28, D39–D42
★	STV2H-0	D11, D12

POWER AMPLIFIER ASSEMBLY (AWH-112)



Parts List of AWH-112 (for HE and HB types)

CAPACITORS

Mark	Part No.	Symbol & Description
	ACH-359 (CEXANP 4R7M 50)	C27–C30 Electrolytic (4,7/50V NP)
	CEA R47M 100L	C63, C64
	CEA 470M 25L	C25, C26
	CEA 470M 50L	C59–C62
	CCDSL 270K 500	C7–10
	CEA 101M 63L	C17–C20
	CCDSL 120K 500	C39, C40, C43
	CCDSL 120K 500	C44, C55, C56
	CCDSL 330K 500	C13–C16
	CCDSL 680K 500	C47, C48
	CCDSL 470J 50	C1, C2
	CCDSL 680J 50	C41, C42
	CKDYB 472K 50	C57, C58
	CKDYB 471K 500	C53, C54
	CKDYF 103Z 50	C35, C36, C45, C46
	CQMA 102K 250	C37, C38

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Part No.	Symbol & Description
★	ACP-019	VR1, VR2 Semifixed (100Ω)
	RD¼PM □□□J	R1, R2, R5, R6, R15–R26, R29, R30, R33, R34, R45–R60, R65–R68, R77–R84, R89, R90, R95–R98, R107–R110, R115–R120
	RD¼PM □□□ JNL	R3, R4, R9–R12
⚠	RD¼PMF □□□ J	R31, R32, R35–R44, R61–R64, R69–R72, R91–R94, R113, R114, R121, R122
	RD½PS □□□ J	R73-R76
⚠	RD½PSF□□□ J	R111, R112
★	TH101–2	TH1, TH2
★	TH103–2	TH3, TH4

SEMICONDUCTORS

Mark	Part No.	Symbol & Description
★★	2SK129A	Q1, Q2
★★	2SC2291	Q3, Q4
★★	2SA979	Q5, Q6
★★	2SC2259	Q9, Q10
★★	2SA733A (2SA1115/A/) (2SA992)	Q11, Q12
★★	2SA905A	Q13, Q14
★★	2SC1915A (2SC1915)	Q15, Q16
★★	2SC2603/A/ (2SC1400)	Q17, Q18, Q23, Q24
★★	2SA1115/A/ (2SA750)	Q19–Q22
★★	2SA893A	Q25, Q26
★★	2SC1890A	Q27, Q28
★★	2SC2275	Q29, Q30
★★	2SA985	Q31, Q32
★★	2SB507P (2SB834) (2SB682)	Q101
★★	2SD313P (2SD880) (2SD712)	Q102
★★	NJM4558DX (μPC4558C-P)	Q33
★	MZ-047	D21–D24
★	MZ-150 (WZ-150)	D33
★	MZL240	D101, D102
★	1S2471	D43–D46
★	1S1555 (1S2473) (1S2076) (US1035)	D1–D4, D7, D8, D13–D20, D25–D28, D39–D42
★	STV2H-0	D11, D12

SCHEMATIC DIAGRAMS

For KU and KC types

SWITCH Ass'y (B) (1/2)

EQUALIZER Ass'y AWF-049

TONE CONTROL Ass'y GWG-152

Q301 μPC4558C TONE AMP

VOLUME Ass'y (B)

SWITCH Ass'y (C) (1/2)

CONNECTOR Ass'y (D)

CONNECTOR Ass'y (A)

SWITCH Ass'y (A) AWS-154

CONNECTOR Ass'y (B&C)

FUNCTION SWITCH Ass'y GWM-185

SWITCH Ass'y (B) (2/2)

MUT SWITCH Ass'y GWS-285

VOLUME Ass'y (A) GWM-182

Q1 TA7318P-A COMPRESSOR

Q2,3 2SC945A LAMP DRIVE

S2: FUNCTION ASG-403

S3: MUTING ASG-278

S4: ASG-281

S5: ASG-280

RL1: RELAY ASR-071

RL2,3: RELAY ASR-071

S1: REC OUT SELECTOR ASX-156

Q1,2 2SK194
Q5,6 2SC2291
Q7,8 2SA750
Q9,10 2SA872A
Q11,12 2SC1735
EQUALIZER AMP

Q13 2SD313P
Q14 2SB507P
Q15 2SA750
Q16 2SC1400
Q17 2SC1890A
Q18 2SA893A
STABILIZER

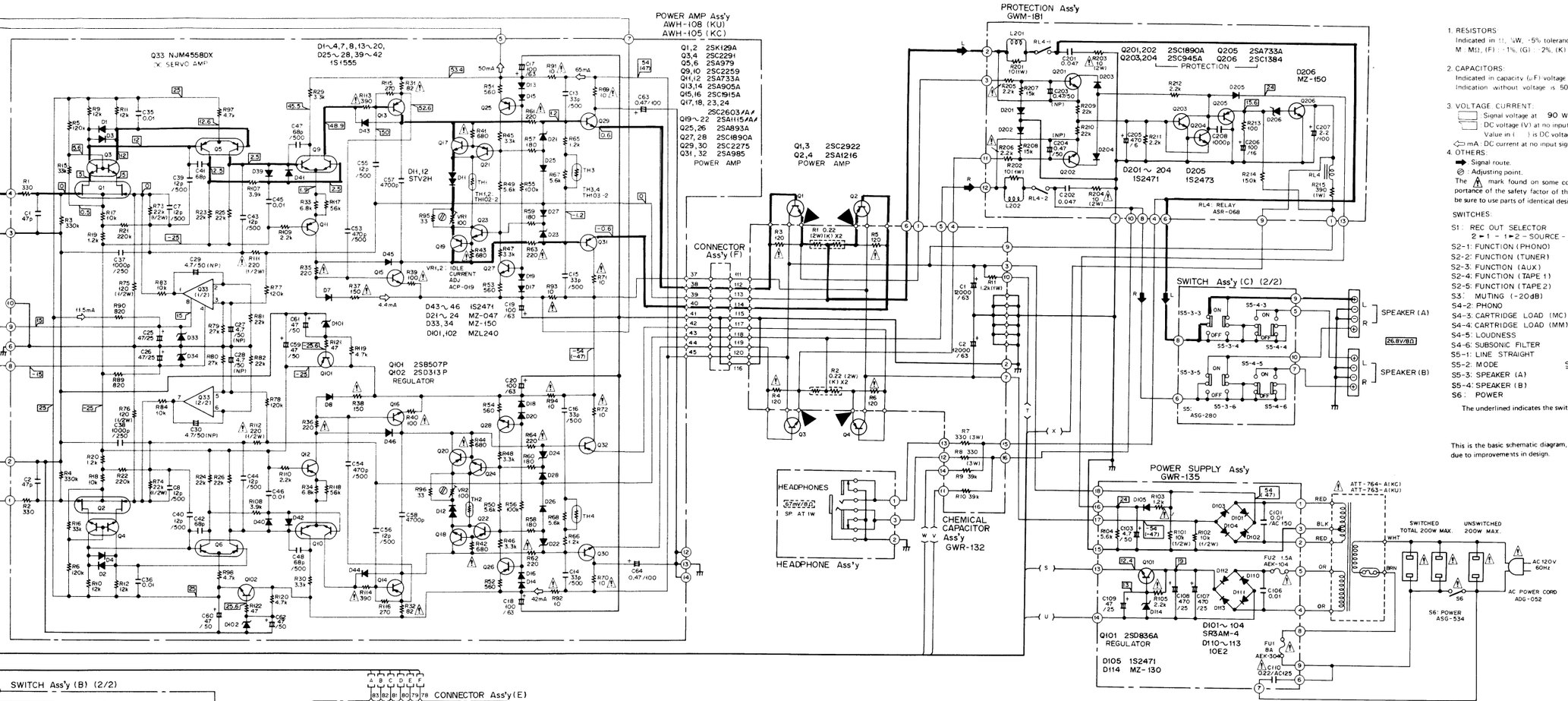
D7,8 MZL320
D9~14 1S2473

D1~6 1S2473

PL3 (MUTING) PL2 (OPERATING) PL1 (PROTECTION)
PL1~3: LAMP Ass'y 8V 50mA AEL-152

PHONO MC:250μV MM:2.5mV
AUX 150mV
TUNER 150mV
TAPE1 150mV PLAY
TAPE2 150mV PLAY
REC

NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.



1. RESISTORS:
Indicated in Ω, 1/4W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% tolerance

2. CAPACITORS:
Indicated in capacity (μF) voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
: Signal voltage at 90 W + 90 W 8Ω output (1kHz)
: DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
⇦mA: DC current at no input signal

4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

SWITCHES:

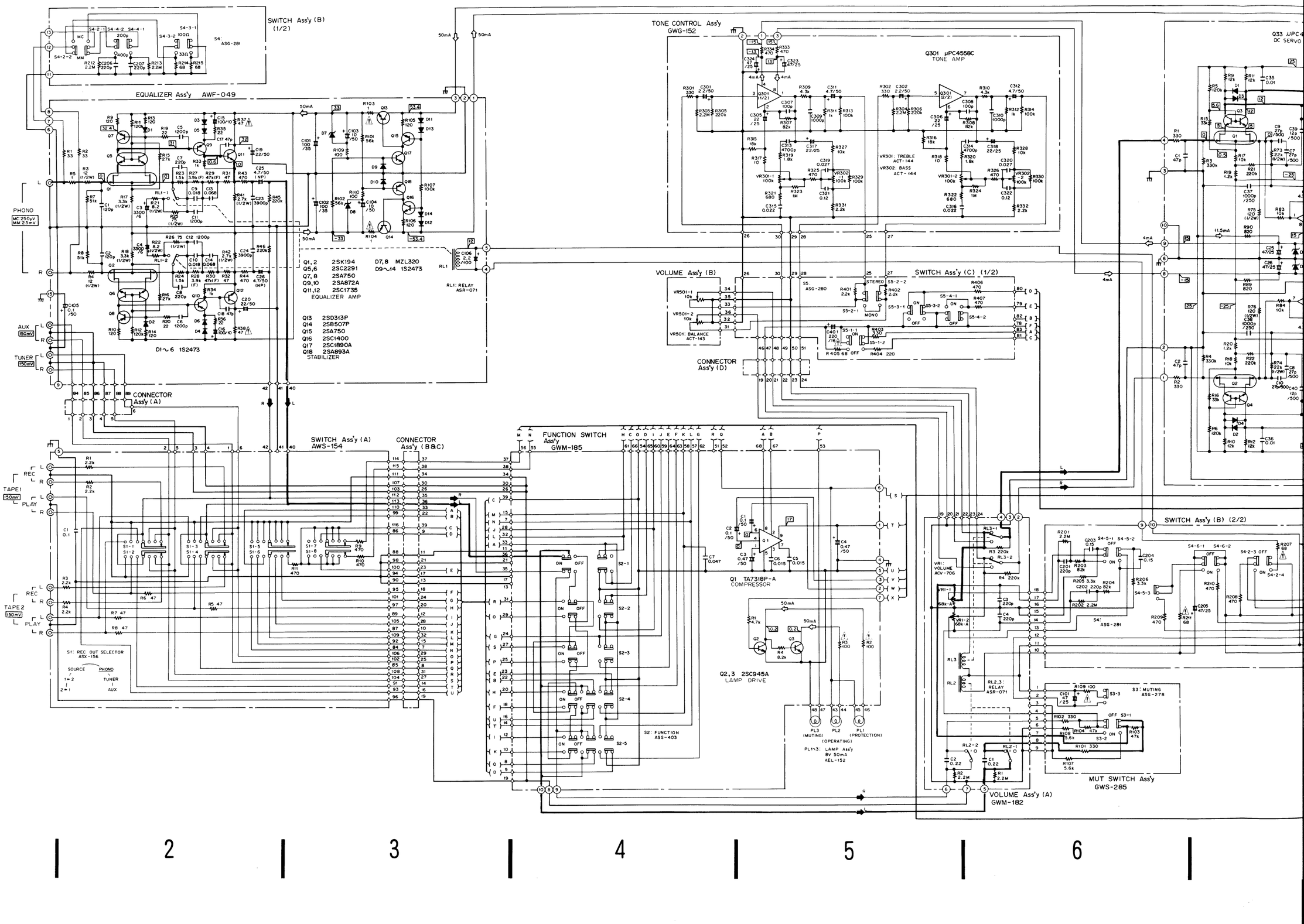
S1: REC OUT SELECTOR
2 ⇄ 1 – 1 ⇄ 2 – SOURCE – PHONO – TUNER – AUX

S2-1:	FUNCTION (PHONO)	ON – OFF
S2-2:	FUNCTION (TUNER)	ON – OFF
S2-3:	FUNCTION (AUX)	ON – OFF
S2-4:	FUNCTION (TAPE 1)	ON – OFF
S2-5:	FUNCTION (TAPE 2)	ON – OFF
S3:	MUTING (–20dB)	ON – OFF
S4-2:	PHONO	MM – MC
S4-3:	CARTRIDGE LOAD (MC)	100Ω – 33Ω
S4-4:	CARTRIDGE LOAD (MM)	200p – 400p
S4-5:	LOUDNESS	ON – OFF
S4-6:	SUBSONIC FILTER	ON – OFF
S5-1:	LINE STRAIGHT	ON – OFF
S5-2:	MODE	STEREO – MONO
S5-3:	SPEAKER (A)	ON – OFF
S5-4:	SPEAKER (B)	ON – OFF
S6:	POWER	ON – OFF

The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

For HE and HB types



NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

1. RESISTORS:
Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% tolerance

2. CAPACITORS:
Indicated in capacity (μF) / voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE/CURRENT:
: Signal voltage at 90 W + 90 W 8Ω output (1kHz)
: DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
⇦ mA : DC current at no input signal

4. OTHERS:
➡ Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

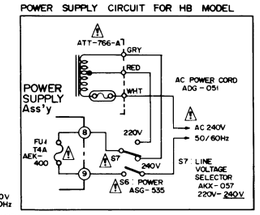
SWITCHES:

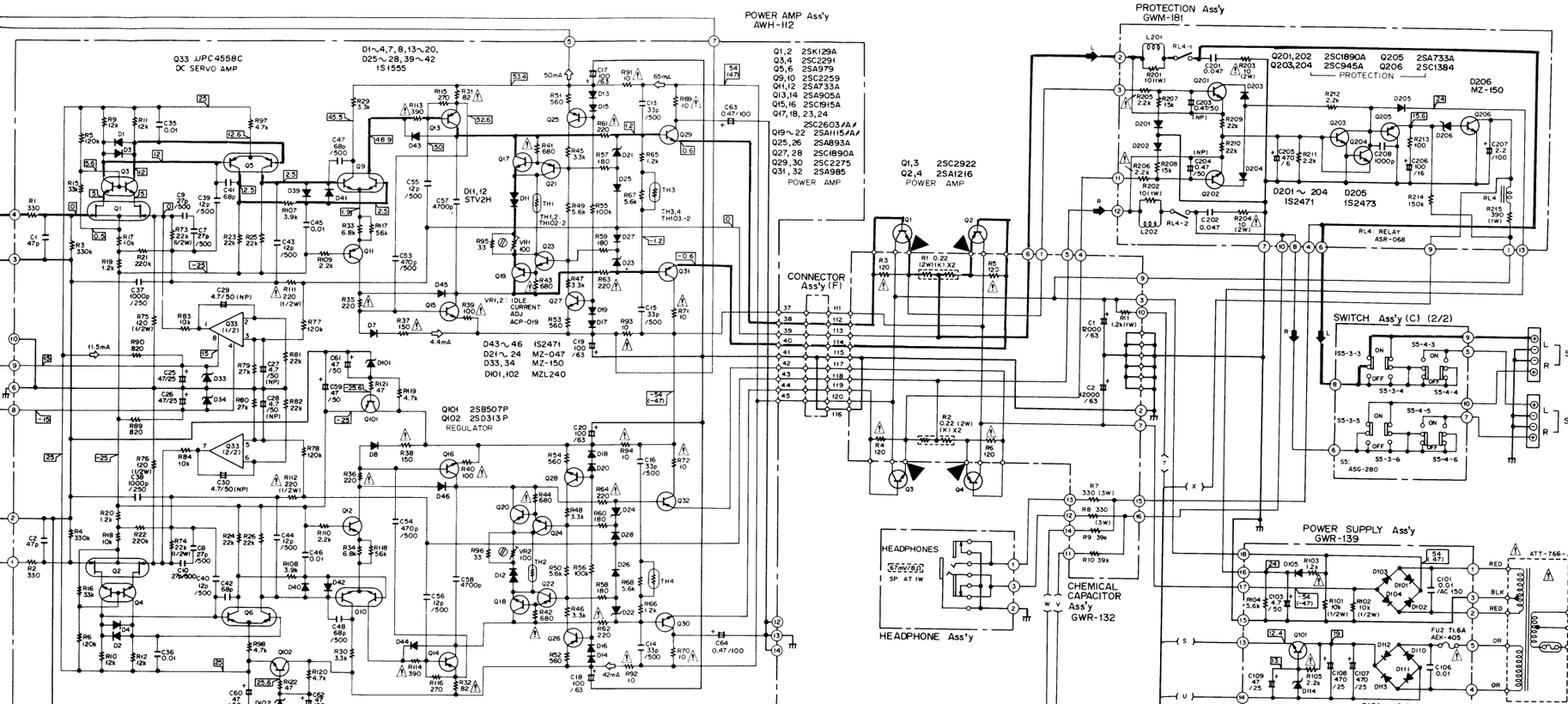
S1 :	REC OUT SELECTOR	
	2 ➡ 1 - 1 ➡ 2 - SOURCE - PHONO - TUNER - AUX	
S2-1:	FUNCTION (PHONO)	ON - OFF
S2-2:	FUNCTION (TUNER)	ON - OFF
S2-3:	FUNCTION (AUX)	ON - OFF
S2-4:	FUNCTION (TAPE 1)	ON - OFF
S2-5:	FUNCTION (TAPE 2)	ON - OFF
S3:	MUTING (-20dB)	ON - OFF
S4-2:	PHONO	MM - MC
S4-3:	CARTRIDGE LOAD (MC)	100Ω - 33Ω
S4-4:	CARTRIDGE LOAD (MM)	200Ω - 400Ω
S4-5:	LOUDNESS	ON - OFF
S4-6:	SUBSONIC FILTER	ON - OFF
S5-1:	LINE STRAIGHT	ON - OFF
S5-2:	MODE	STEREO - MONO
S5-3:	SPEAKER (A)	ON - OFF
S5-4:	SPEAKER (B)	ON - OFF
S6:	POWER	ON - OFF
S7:	LINE VOLTAGE SELECTOR	220V - 240V

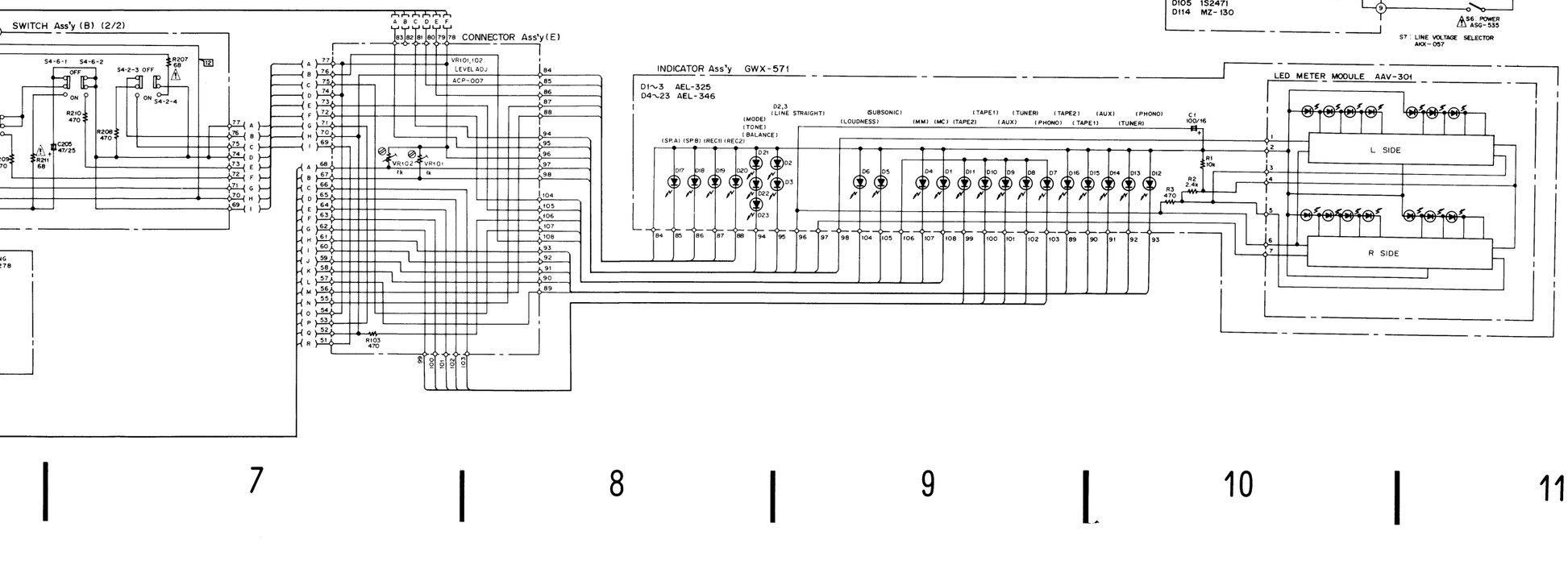
The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

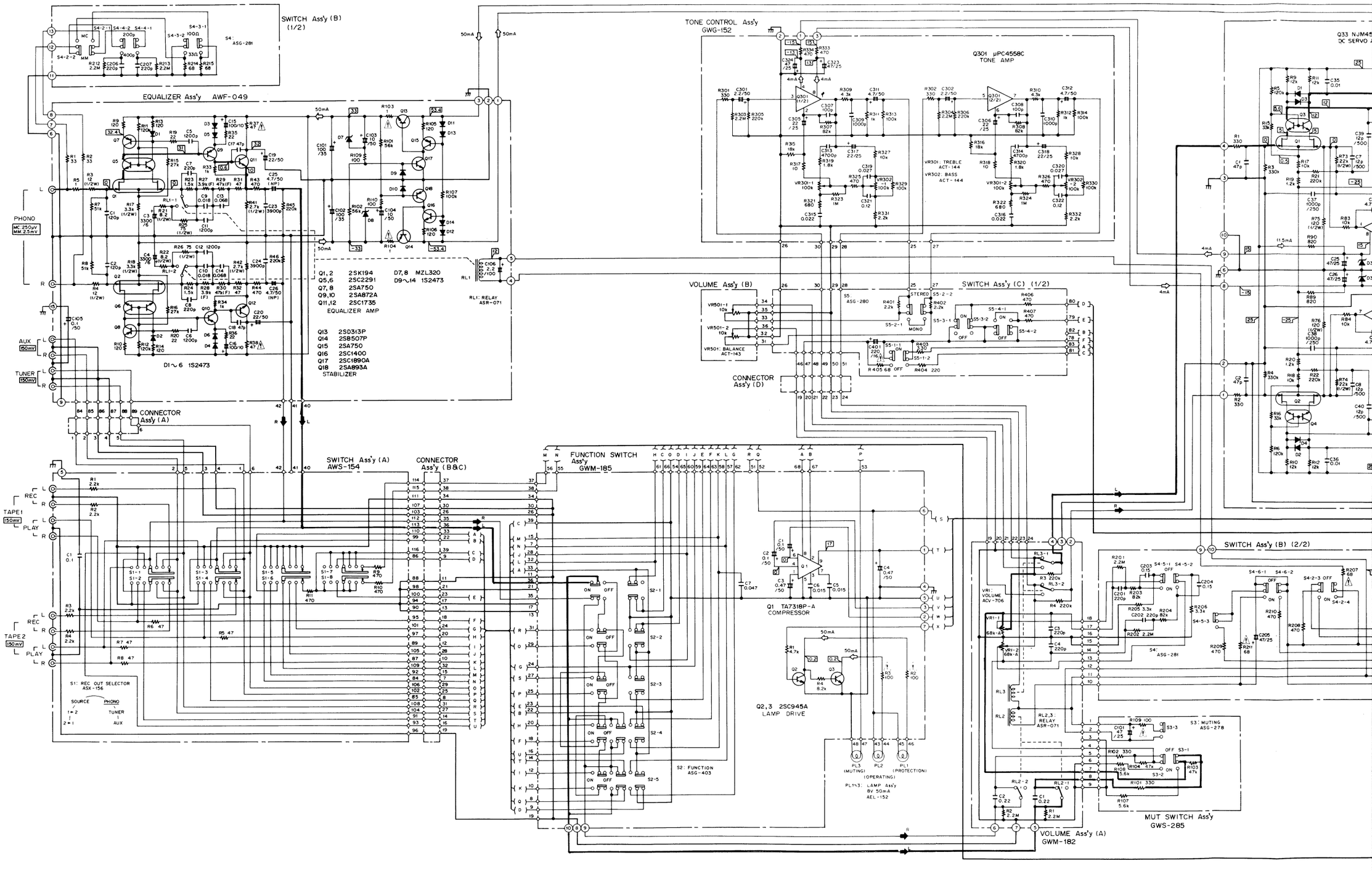
POWER SUPPLY CIRCUIT FOR HB MODEL







For S and S/G types



NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

1. RESISTORS:
Indicated in Ω, ¼W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% tolerance

2. CAPACITORS:
Indicated in capacity (μF) / voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE CURRENT:
Signal voltage at 90 W + 90 W 8Ω output (1kHz)
DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
⇦ mA : DC current at no input signal

4. OTHERS:
➡ Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

SWITCHES:

S1 : REC OUT SELECTOR
2 ⇤ 1 – 1 ⇥ 2 – SOURCE – PHONO – TUNER – AUX

S2-1: FUNCTION (PHONO)	ON – OFF
S2-2: FUNCTION (TUNER)	ON – OFF
S2-3: FUNCTION (AUX)	ON – OFF
S2-4: FUNCTION (TAPE 1)	ON – OFF
S2-5: FUNCTION (TAPE 2)	ON – OFF
S3 : MUTING (–20dB)	ON – OFF
S4-2: PHONO	MM ⇤ MC
S4-3: CARTRIDGE LOAD (MC)	100Ω – 33Ω
S4-4: CARTRIDGE LOAD (MM)	200p – 400p
S4-5: LOUDNESS	ON – OFF
S4-6: SUBSONIC FILTER	ON – OFF
S5-1: LINE STRAIGHT	ON – OFF
S5-2: MODE	STEREO – MONO
S5-3: SPEAKER (A)	ON – OFF
S5-4: SPEAKER (B)	ON – OFF
S6 : POWER	ON – OFF
S7 : LINE VOLTAGE SELECTOR	110V – 120V – 220V – 240V

The underlined indicates the switch position.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.